

FIELD ACTIVITIES OVERSIGHT REPORT (REVISION 01)
PHASE 2 SOIL INVESTIGATION (5 - 6 NOVEMBER 2007)
GULFCO MARINE MAINTENANCE SITE, FREEPORT, TEXAS

This Field Activities Oversight Report summarizes remedial investigation/feasibility study (RI/FS) oversight activities conducted on 5 – 6 November 2007 at the Gulfco Marine Maintenance (Gulfco) Superfund site, located in Freeport, Brazoria County, Texas. As requested by the U.S. Environmental Protection Agency (EPA), EA Engineering, Science, and Technology, Inc. (EA) performed oversight of the Phase 2 soil investigation conducted by the potentially responsible party (PRP)'s primary consultant, Pastor, Behling & Wheeler, LLC (PBW). Additionally, EA obtained soil split samples, as directed by EPA.

Participants included:

- Mr. Gary Miller, EPA
- Mr. Eric Pastor, PBW
- Mr. Len Mason, PBW
- Mr. John Brayton, PBW
- Universal Drilling Services (UDS) (PBW direct-push subcontractor)
- Ms. April Ballweg, EA.

According to EA oversight personnel, PBW performed field activities in accordance with the applicable standard operating procedures (SOPs) and the following EPA-approved plans:

- PBW's RI/FS Work Plan (May 2005)
- PBW's Sampling and Analysis Plan (SAP) (May 2006)
- PBW's Technical Memorandum: "Phase 1 Soil Investigation Data and Proposed Phase 2 Soil Investigation Activities" (September 2007)
- EPA's Letter Approving PBW's Proposed Phase 2 Soil Investigation Activities with Enclosed Modifications (October 2007).

HEALTH AND SAFETY

PBW conducted daily health and safety briefings prior to initiation of field activities.

WEATHER CONDITIONS

During the soil sampling activities, the temperature ranged from 65 – 70 °F with partly cloudy to cloudy skies and light winds. A brief rain shower occurred on 6 November 2007 during sample collection at SB-205.

SITE ACTIVITIES**5 November 2007**

At 1145 hours, EA arrived at the Gulfco site and met with EPA and PBW. PBW indicated that global positioning system (GPS) coordinates had been collected earlier that day for all of the soil sampling locations. **Table 1** presents GPS coordinates for the split sampling locations.

**TABLE 1 GPS COORDINATES FOR EA SOIL SPLIT SAMPLES
(5 – 6 NOVEMBER 2007)**

PBW Sample ID	EA Split Sample ID	Northing	Easting
L20SB03	L20SB030-0.5-EPA	10519607.06	908280.12
	L20SB031-2-EPA		
L20SB06	L20SB060-0.5-EPA	10519395.39	908492.67
SB-202	SB2020-0.5-EPA	10520648.67	908684.13
SB-204	SB2041.5-2-EPA	10520468.53	908536.46
Notes: Northing and Easting State-Plane coordinate system details: Datum = NAD 83 Universal Transverse Mercator Zone 15 feet Units = U.S. Survey feet			

EA then departed the site to replace health and safety equipment that had been lost by FedEx during shipment.

At 1215 hours, PBW collected surface soil sample L20SB07 from 0 to 0.5 foot below ground surface (bgs) using a hand trowel.

At 1225 hours, PBW collected surface soil sample L20SB06 from 0 to 0.5 foot bgs using a hand trowel.

At 1230 hours, PBW collected surface soil sample L20SB05 from 0 to 0.5 foot bgs using a hand trowel.

All three surface soil samples were collected by PBW for analysis for Aroclor-1254, arsenic, barium, benzo(a)pyrene, lead, molybdenum, and zinc.

At 1300 hours, EA met EPA and PBW at soil sampling Grid L20. UDS arrived at 1315 hours with a Geoprobe® track-mounted 6620DT direct-push rig.

At sample location L20SB01, UDS pushed a Geoprobe® core barrel from 0 to 4 feet bgs. PBW collected soil samples from the 0 – 0.5 foot and 1 – 2 feet bgs depth intervals. At 1325 hours,

soil samples were collected by PBW for analysis for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, copper, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene, lead, and zinc.

Following completion of sampling activities at each location, UDS plugged each of the boreholes with bentonite.

At 1344 hours, UDS set up the Geoprobe® at sample location L20SB02. At 1350 hours, PBW collected soil samples from the 0 – 0.5 foot and 1 – 2 feet bgs depth intervals. At 1400 hours, PBW collected a soil sample from the 4 – 5 feet bgs depth interval. PBW also collected a field duplicate sample (0 – 0.5 foot bgs) and designated a matrix spike/matrix spike duplicate (MS/MSD) (1 – 2 feet bgs). Samples were collected by PBW for the same analysis as L20SB01.

At 1408 hours, UDS set up the Geoprobe® at sample location L20SB03 (Appendix A, Photograph 1). At 1414 hours, PBW collected a sample of asphaltic material from the 0 – 0.5 foot depth interval (Appendix A, Photographs 2 and 3). At 1417 hours, PBW collected a clay soil sample from the 1 – 2 feet bgs depth interval. At 1430 hours, PBW collected a clay soil sample from the 4 – 5 feet bgs depth interval. Samples were collected by PBW for analysis for Aroclor-1254, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chromium, copper, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene, lead, molybdenum, and zinc. EA obtained soil split samples from the 0 – 0.5 foot and 1 – 2 feet bgs depth intervals for analysis for semivolatile organic compounds (SVOCs), metals, and polychlorinated biphenyls (PCBs) (see **Table 2**).

TABLE 2 EA SURFACE SOIL SPLIT SAMPLE SUMMARY (5 – 6 NOVEMBER 2007)

PBW Sample ID	Depth Interval (feet bgs)	Date Collected	Time Collected	EA Split Sample ID	EA Split Sample Analytical Parameters
L20SB03	0 – 0.5	11-05-07	1414 hours	L20SB030-0.5-EPA	SVOCs, PCBs, metals (including mercury)
	1 – 2	11-05-07	1417 hours	L20SB031-2-EPA	SVOCs, PCBs, metals (including mercury)
L20SB06	0 – 0.5	11-05-07	1453 hours	L20SB060-0.5-EPA	SVOCs, PCBs, metals (including mercury)
SB-202	0 – 0.5	11-06-07	0925 hours	SB2020-0.5-EPA	SVOCs, PCBs, metals (including mercury), organochlorine pesticides
SB-204	1.5 – 2	11-06-07	1100 hours	SB2041.5-2-EPA	VOCs, SVOCs, organochlorine pesticides

At 1435 hours, UDS set up the Geoprobe® at sample location L20SB04. At 1440 hours, PBW collected a sample of an unknown green material from the 0 – 0.5 foot bgs depth interval. At 1445 hours, PBW collected a dark clay soil sample from the 1 – 2 feet bgs depth interval, and a clay soil sample from the 4 – 5 feet bgs depth interval. With the exception of the 4 – 5 feet bgs depth interval, samples were submitted for analysis for Aroclor-1254, barium, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chromium, copper, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene, lead, mercury, molybdenum, and zinc. The soil sample collected from the 4 – 5 feet bgs depth interval was submitted for analysis for Aroclor-

1254, benzo(a)pyrene, benzo(b)fluoranthene, copper, dibenz(a,h)anthracene, lead, mercury, and zinc.

At 1453 hours, EA and PBW returned to sample location L20SB06 to collect a soil split sample from the 0 to 0.5 foot bgs depth interval using a hand trowel (see **Table 2**) (Appendix A, Photograph 4).

At 1505 hours, UDS set up the Geoprobe® at sample location SA1SB15. At 1520 hours, PBW collected a soil sample from the 4 – 5 feet bgs depth interval. The sample was submitted for analysis for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene, and lead.

At 1523 hours, UDS set up the Geoprobe® at sample location SA2SB16. At 1536 hours, PBW collected a soil sample from the 4 – 5 feet bgs depth interval. The sample was submitted for analysis for Aroclor-1254, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, and lead. PBW also collected a field duplicate sample at this location.

From 1530 – 1700 hours, UDS collected soil cores at sample locations SA3SB17, SB2SB22, SB4SB24, SC3SB27, SC4SB28, SD3SB33, SD5SB35, and SF2SB44 using the Geoprobe®. PBW collected soil samples from the soil cores as discussed below.

At 1550 hours, PBW collected a soil sample from the 4 – 5 feet bgs depth interval at sample location SA3SB17. The sample was submitted for analysis for Aroclor-1254, benzo(a)pyrene, lead, and mercury.

At 1556 hours, PBW collected a soil sample from the 4 – 5 feet bgs depth interval at sample location SB2SB22. The sample was submitted for analysis for Aroclor-1254 and benzo(a)pyrene.

At 1605 hours, PBW collected a soil sample from the 4 – 5 feet bgs depth interval at sample location SB4SB24. The sample was submitted for analysis for Aroclor-1254, benzo(a)pyrene, and dibenz(a,h)anthracene.

At 1620 hours, PBW collected a soil sample from the 4 – 5 feet bgs depth interval at sample location SC3SB27. The sample was submitted for analysis for dibenz(a,h)anthracene.

At 1630 hours, PBW collected a dark clay soil sample from the 4 – 5 feet bgs depth interval at sample location SC4SB28. The sample was submitted for analysis for benzo(a)pyrene and lead.

At 1640 hours, PBW collected a dark clay soil sample from the 4 – 5 feet bgs depth interval at sample location SD3SB33. The sample was submitted for analysis for benzo(a)pyrene.

At 1650 hours, PBW collected a soil sample from the 4 – 5 feet bgs depth interval at sample location SD5SB35. The sample was submitted for analysis for Aroclor-1254,

benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene, and mercury. PBW also designated this sample as an MS/MSD.

At 1704 hours, PBW collected a gray clay soil sample from the 4 – 5 feet bgs depth interval at sample location SF2SB44. The sample was submitted for analysis for dibenz(a,h)anthracene.

At 1715 hours, UDS extinguished a small fire ignited by the generator at the Geoprobe® decontamination area. There were no injuries or damage resulting from the fire. PBW decided to shut down sampling activities for that day.

At 1730 hours, EA departed the site.

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At 0710 hours, EA arrived on site. PBW conducted a safety briefing until 0740 hours.

At 0745 hours, UDS set up the decontamination area.

At 0800 hours, UDS set up the Geoprobe® at sample location SF3SB45. At 0810 hours, PBW collected a saturated soil sample from the 4 – 5 feet bgs depth interval. The sample was submitted for analysis for arsenic and benzo(a)pyrene.

At 0815 hours, UDS set up the Geoprobe® at sample location SF4SB46. At 0817 hours, PBW collected a soil sample from the 4 – 5 feet bgs depth interval. The sample was submitted for analysis for benzo(a)pyrene.

At 0818 hours, UDS set up the Geoprobe® at sample location SG4SB56. At 0825 hours, PBW collected a gray clay soil sample from the 4 – 5 feet bgs depth interval. The sample was submitted for analysis for arsenic and benzo(a)pyrene.

At 0850 hours, following setup of the Geoprobe®, PBW collected a gray clay soil sample from the 4 – 5 feet bgs depth interval at sample location SG6SB59. The sample was submitted for analysis for benzo(a)pyrene.

At 0900 hours, following setup of the Geoprobe®, PBW collected a soil sample from the 4 – 5 feet bgs depth interval at sample location SI1SB69. The sample was submitted for analysis for arsenic.

At 0910 hours, PBW calibrated the MiniRAE 2000 photo-ionization detector (PID) for ambient air monitoring during direct-push sampling activities at locations SB-201, SB-202, SB-203, SB-204, SB-205, SB-206, and ND3SB04. PID readings in the breathing zone were at or below background levels during all subsequent sampling activities.

At 0920 hours, UDS set up the Geoprobe® at sample location SB-201. PBW collected soil samples from the 0 – 0.5 foot and 1.5 – 2 feet bgs depth intervals. The sample collected from the

0 – 0.5 foot bgs depth interval was submitted for analysis for SVOCs, pesticides, metals, and PCBs. The sample collected from the 1.5 – 2 feet bgs depth interval was submitted for analysis for volatile organic compounds (VOCs), SVOCs, organochlorine (OC) pesticides, metals, and PCBs.

At 0925 hours, following setup of the Geoprobe® (Appendix A, Photograph 5), PBW collected surface soil samples from the 0 – 0.5 foot and 1.5 – 2 feet bgs depth intervals at sample location SB-202. The sample collected from the 0 – 0.5 foot bgs depth interval was submitted for analysis for SVOCs, pesticides, metals, and PCBs. The sample collected from the 1.5 – 2 feet bgs depth interval was submitted for analysis for VOCs, SVOCs, OC pesticides, metals, and PCBs. EA obtained a soil split sample from this interval for same analyses (see **Table 2**).

At 0945 hours, following setup of the Geoprobe®, PBW collected soil samples from the 0 – 0.5 foot and 1.5 – 2 feet bgs depth intervals at sample location SB-203. The sample collected from the 0 – 0.5 foot bgs depth interval was submitted for analysis for SVOCs, pesticides, metals, and PCBs. The sample collected from the 1.5 – 2 feet bgs depth interval was submitted for analysis for VOCs, SVOCs, OC pesticides, metals, and PCBs.

At 0950 hours, UDS set up the Geoprobe® at sample location ND3SB04, and PBW collected a soil sample from the 4 – 5 feet bgs depth interval. The sample was submitted for analysis for 1,2,3-trichloropropane and trichloroethene.

At 0959 hours, UDS set up the Geoprobe® at sample location SB-204. PBW collected soil samples from the 1.5 – 2 feet bgs depth interval. This sample interval was originally scoped as the 1 – 2 feet bgs depth interval, however, wood debris encountered at 1.8 feet bgs resulted in an incomplete soil sample recovery (Appendix A, Photographs 6 and 7). The sample was submitted for analysis for VOCs, SVOCs, OC pesticides, metals, and PCBs. EA obtained a soil split sample from this interval for analysis for VOCs, SVOCs, and OC pesticides (see **Table 2**).

At sample location SB-204, a soil and debris sample was recovered from the 3 – 4 feet bgs depth interval. The sample was submitted for analysis for VOCs, SVOCs, OC pesticides, metals, and PCBs. PBW collected a soil sample from the underlying 5 – 6 feet bgs depth interval for VOCs, SVOCs, OC pesticides, metals, and PCBs analyses.

Between 1000 hours and 1138 hours, following setup of the Geoprobe®, PBW collected soil samples at sample locations SB-205 and SB-206 from the 1 – 2 feet, 3 – 4 feet, and 5 – 6 feet bgs depth intervals for analysis for VOCs, SVOCs, OC pesticides, metals, and PCBs. During sample collection at SB-205, a naphthalene odor was evident. During sample collection at SB-206, the Geoprobe® encountered packing material and plastic at 3 – 4 feet bgs (Appendix A, Photographs 8, 9, and 10). PBW also designated this sample (3 – 4 feet bgs) as an MS/MSD.

At 1210 hours, EA departed the site and drove to the FedEx facility. At 1255 hours, EA released custody of the split samples to FedEx for shipment to its subcontractor analytical laboratory (TestAmerica in Austin, Texas).

At 1320 hours, EA arrived back on-site.

At 1355 hours, PBW collected equipment rinsate blank samples.

At 1400 hours, EPA arrived on site. At 1430 hours, EA departed the site to return to Dallas.

EA submitted soil split samples for fixed laboratory analysis using one or more of the following analytical methods:

- VOCs using SW-846 method 8260B
- SVOCs using SW-846 Method 8270C
- Metals using SW-846 Method 6010B
- Mercury using SW-846 Method 7471A
- OC pesticides using SW-846 Method 8081A
- PCBs (aroclor) using SW-846 Method 8082
- Moisture content using American Society of Testing and Materials Method D 2216-90.

REFERENCES

- Pastor, Behling & Wheeler, LLC (PBW). 2005. "Remedial Investigation and Feasibility Study (RI/FS) Work Plan for the Gulfco Marine Maintenance Superfund Site, Freeport, Texas." May.
- PBW. 2006. "Sampling and Analysis Plan – Volume 1. Field Sampling Plan for the Gulfco Marine Maintenance Superfund Site, Freeport, Texas." May.
- PBW. 2007. Technical Memorandum: "Phase 1 Soil Investigation Data and Proposed Phase 2 Soil Investigation Activities, Gulfco Marine Maintenance Superfund Site, Freeport, Texas." 11 September.
- U.S. Environmental Protection Agency. 2007. Letter Approving PBW's Proposed Phase 2 Soil Investigation Activities with Enclosed Modifications. 11 October.

Appendix A

Photographs



Photograph 1 Date: 5 November 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Geoprobe® at L20SB03



Photograph 2 Date: 5 November 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Collection of soil sample at L20SB03



Photograph 3 Date: 5 November 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Asphalt-like material at L20SB03



Photograph 4 Date: 5 November 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Soil sample collected from L20SB06



Photograph 5 Date: 6 November 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Geoprobe® at SB-202



Photograph 6 Date: 6 November 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Wood debris noted at SB-204 at 1.8 feet below ground surface (bgs)



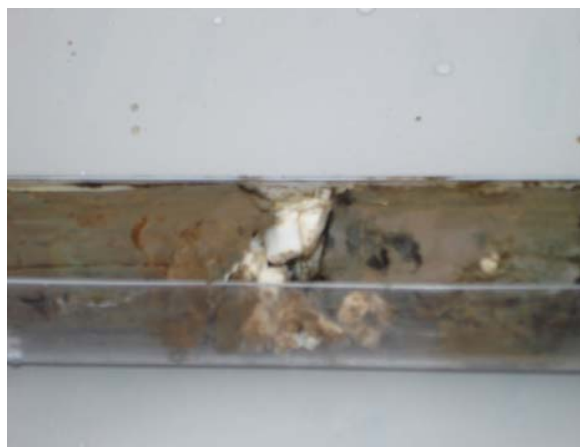
Photograph 7
Date: 6 November 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Soil sample collected at SB-204 from 1.5 to 2 feet bgs for volatile organic compounds



Photograph 8
Date: 6 November 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Debris (white paper) noted at SB-206



Photograph 9
Date: 6 November 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Green plastic material noted at SB-206



Photograph 10
Date: 6 November 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: White packing material noted at SB-206